CLAIMS

1. Safety system (10; 20) of a lift installation, with

- a) a control unit (11; 21),
- b) at least one bus node (13; 23; 33),
- c) at least one safety element (16; 26; 36) and
- d) a bus (12; 22, 22.1, 22.2; 32.1, 32.2) which enables communication between the control unit (11; 21) and the bus node (13; 23; 33),

characterised in that the bus node (13; 23; 33) comprises first switching means (14; 24; 34) which on digital presetting of a target magnitude by the control unit (11; 21) acts on the safety element (16; 26; 36) with a first analog signal and second switching means (15; 25; 35) which derive an analog signal from the safety element (16; 26; 36) and make digital feedback information available to the control unit (11; 21) by way of the bus (12; 22, 22.1, 22.2; 32.1, 32.2).

- 2. Safety system (10; 20) according to claim 1, characterised in that the safety element (16; 26; 36) is one or more of the following safety-relevant elements:
 - a) door contact
 - b) lock contact
 - c) buffer contact
 - d) flap contact
 - e) sensor
 - f) actuator
 - g) travel switch
 - h) emergency stop switch.
- 3. Safety system (10; 20) according to claim 1, characterised in that the first switching means (14; 24; 34) comprises a write element (24.2; 34.2), which provides the first analog signal, and that the second switching means (15; 25; 35) comprises a read element (25.2; 35.2), which processes a second analog signal.
- 4. Safety system (10; 20) according to claim 3, characterised in that the bus node (13; 23; 33) comprises a processor (24.1; 34.1), which converts the presetting of the control unit (11; 21) into the first analog signal or triggers a conversion into the first analog signal.

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- 5. Safety system (10; 20) according to claim 3 or 4, characterised in that the bus node (13; 23; 33) comprises a processor (25.1; 35.1), which converts the second analog signal into the digital feedback information or triggers a conversion of the second analog signal.
- 6. Safety system (10; 20) according to one of the preceding claims, characterised in that the switching means at least in part is an analog switching means (24.3, 25.3; 34.2, 35.3, 35.4) and that the bus node (13; 23; 33) comprises an analog-to-digital converter,
 - a) which converts the digital presetting of the control unit (11; 21) into an analog magnitude which corresponds with the first analog signal or is correlated with the first analog signal, and
 - b) which converts the analog signal into digital information.
- 7. Safety system (10; 20) according to one of the preceding claims, characterised in that the bus node (13; 23; 33) carries out a qualitative comparison of the first analog signal with the second analog signal and/or a qualitative evaluation of the first analog signal and makes the result of the comparison available as digital diagnostic information.
- 8. Safety system (10; 20) according to one of claims 1 to 6, characterised in that the control unit (11; 21) carries out a quantitative comparison of the first analog signal with the second analog signal, wherein this comparison takes place on the basis of the digital presetting and the digital feedback information.
- 9. Method for continuous checking of a safety system (10; 20) of a lift installation, wherein the safety system (10; 20) comprises a control unit (11; 21), at least one bus node (13; 23; 33), at least one safety element (16; 26; 36) and a bus (12; 22, 22.1, 22.2; 32.1, 32.2), which enables a communication between the control unit (11; 21) and the bus node (13; 23; 33), characterised in that the following steps are carried out:
 - a) transmission of digital information by the control unit (11; 21) to the bus node (13; 23; 33) by way of the bus (12; 22, 22.1, 22.2; 32.1, 32.2) in order to thereby preset a target magnitude,
 - b) conversion of the digital information by the bus node (13; 23; 33) in order to prepare a first analog signal which corresponds with the target magnitude or is correlated therewith,
 - c) application of the first analog signal to, or impression of the first analog signal on, the safety element (16; 26; 36),

- d) derivation or reception of an analog signal at a safety element (16; 26; 36) by the bus node (13; 23; 33),
- e) processing of the analog signal by the bus node (13; 23; 33) and
- f) preparing digital feedback information by the bus node (13; 23; 33) for the control unit (11; 21).
- 10. Method according to claim 9, characterised in that processing of the digital information and the feedback information is carried out by the control unit (11; 21), wherein preferably a statement about the safety element (16; 26; 36) is made possible.
- 11. Method according to claim 9, characterised in that on processing of the analog signal a qualitative evaluation of the first analog signal is undertaken, wherein the evaluation is carried out entirely or partly by the bus node (13: 23: 33).
- 12. Method according to one of claims 9 to 11, characterised in that the bus node (13; 23; 33) carries out a digital-to-analog conversion in order to convert the digital information into the first signal.
- 13. Method according to one of claims 9 to 11, characterised in that the bus node (13; 23; 33) on processing of the analog signal carries out an analog-to-digital conversion in order to convert the analog signal into the digital feedback information.
- 14. Method according to one of claims 9 to 13, characterised in that the bus node (13; 23; 33) is constructed in redundant manner and steps a) to c) are performed by switching means of the bus node (13; 23; 33) different from the steps d) and e).